

CHAPTER 3

SPECIFICATIONS

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CHAPTER 3

SPECIFICATIONS

3.1 GENERAL

3.1.1 Purpose.

The chapter provides guidance for the preparation of contract specifications. Questions relating to this guidance should be directed to the Mobile District Project Support Section (EN-DW):

Fax No. (334) 690-2902, Telephone No. (334) 694-4023.

Mailing address is:

U. S. Army, Corps of Engineers, Mobile District
CESAM-EN-DW
P. O. Box 2288
Mobile, Alabama 36628-0001

3.1.2 Automated Specifications.

The Mobile District has adopted the use of SPECSINTACT software which has developed an automated specification system. Designers are required to prepare specifications using this automated system. This software is available on several sites located on the INTERNET. The following Internet addresses contain the necessary software, help manuals, and Corps of Engineers (CEGS) Guide Specifications.

SPECSINTACT SOFTWARE SUPPORT UNIT Home Page
<http://www-de.ksc.nasa.gov/specsintact/>

CONSTRUCTION GUIDE SPECIFICATIONS - HUNTSVILLE
<http://155.75.61.110/techinfo/>

Updates to the CEGS are done on a quarterly basis. The Mobile District home page is the only address which contains both CEGS Guide Specifications and Mobile District specific Guide Specifications which are required for use. The internet address for Mobile District Home Page is:
<http://www.sam.usace.army.mil/sam/en/specs/enspec.html>

*NOTE: It is suggested that users review the User's Guide Manual prior to preparing specifications.

Should you have any questions concerning the SPECSINTACT process, contact the Mobile District representative at, (334) 694-4023; FAX (334) 690-2902 at the Mobile District Office or the SPECSINTACT Support Unit at (407)867-8800.

Upon accessing the Internet home page for the Mobile District, a list containing CEGS guide specifications and a separate list containing Mobile District specific guide specifications will be shown. These lists provide a divisional break down for the guide specifications. In order to retrieve the required guide specifications, click on the division in which the specification is located (i.e., Division 2; Section 02050 - Demolition). A list of sections within the selected division are then presented. You may then click on the desired guide specification(s) and download the file(s). It should be noted the file downloaded from the Internet are in a zipped format. Specifications downloaded from the home page are in a compressed (zipped) format. In order to manipulate and use these files, you must unzip them prior to opening the file for use.

3.1.3 Scope.

The designer is responsible for the accurate preparation and coordination of the technical specifications. EN-DW will prepare the non-technical portion of the specifications (i.e., boiler plate or front-end) using input provided by the designer. Although EN-DW will prepare the Special Contract Requirements, the designer will be expected to furnish pertinent information that EN-DW might otherwise be unaware of for inclusion in the Special Contract Requirements. Examples of this information are listed in the paragraph titled AIDS TO ADVERTISING.

3.1.4 Quality of Work.

Specifications prepared by the designer must be accurate, clear, and precise and should not be subject to interpretation. The specifications will be specific, free of ambiguities, and well coordinated with the drawings. The designer shall be solely responsible for insuring the relevancy and accuracy of cross-references between technical sections of the specifications.

3.2 OUTLINE SPECIFICATION.

The designer shall submit an outline specification with the Interim Designs. The outline specification will summarize and describe the various types of construction, list those specifications that have been selected for use, and provide a description of any specifications which must be developed for the project. Exhibit 3-1 provides an example of a typical outline specification.

3.3 TECHNICAL SPECIFICATIONS.

3.3.1 Generating Original Specifications.

Designer developed original specifications may only be used when CEGS or Mobile District specific specifications are not available. The original specifications must match the CEGS specifications in format and document arrangement.

(a) Functional or Descriptive Specifications. Normally prepare "Functional or descriptive specifications" are normally prepared using industry standards, manufacturer's data, and other available information. These specifications will be developed by listing parameters, methods, techniques and other requirements that several manufacturers can satisfy. These specifications will list the essential features, requirements, minimum functions, and other factors to clearly indicate the type and quality of item(s) required. Specifications should not be developed around a single manufacturer.

(b) Sole Source Specifications. Specifying by "Brand" or "Manufacturer's" Name is to be avoided. The use of trade names and proprietary items and the drafting of a specification by adopting a manufacturer's description of a particular article or procedures will be avoided. There may be instances, however, when only one manufacturer's product will satisfy job conditions. For example, in rehabilitation work, updating a particular piece of existing mechanical equipment may require new parts from the manufacturer of that particular piece of equipment. In these case, specifying the "Brand" or "Manufacturer's" name would be acceptable provided that "Sole Source Approval" is received from higher authority. To receive approval, the designer shall provide written "Sole Source Justification" to the Mobile District Project Manager. This justification should be prepared and presented as early in the design process as possible since approval usually takes considerable time. The

designer should understand that specifying by "Brand" or "Manufacturer's" name is the exception, not the rule, and should be avoided if at all possible.

(c) "Or Approved Equal" Specifications. Experience indicates that a "trade name or approved equal" description is appropriate only as a last resort and should be used with great care and discretion. The project file will be documented to explain the necessity for using this approach in each instance it is used. Further, where the "trade name or approved equal" approach is used, the contract provisions will include those salient features of the item or items specified upon which equality will be determined.

3.3.2 General Ordering Procedures.

The designer shall download specifications two times. Sometime between design start and the concept design stage, the designer shall download specifications for use in project formulation and design. These specifications are to be reviewed by the designer prior to starting the preparation of drawings. These specifications shall be USED ONLY AS A REFERENCE in the design of the project, and shall NOT BE USED in preparation of the marked-up rough draft specifications. When drawings are approximately 80% complete, the designer shall download a new set of specifications. These specifications will be used to develop specifications for the final design submittal.

3.3.3 Tailoring and Coordination of Specifications.

(a) Each specification used in the preparation of project specifications will be tailored to fit the requirements of the project. Where numbers, symbols, words, phrases, clauses, or sentences are enclosed in brackets [], a designer's choice or modification must be made. Applicable requirements shall be edited only to the extent allowed by these designer choices. The designer shall exercise care in making the choice or modification. Where blank spaces are provided for insertion of data or text, the designer shall insert the appropriate data or text. Where entire paragraphs are not applicable, they must be deleted. When necessary to add requirements, they must be consistent with the other requirements of the specification and must not unnecessarily restrict products that can be furnished. Prior to marking up each specification for the final design submittal, the designer shall review all notes attached at the beginning of the specification.

(b) Each specification used in the preparation of project specifications must be coordinated with other specification sections included in the project and with the project drawings. Duplication of requirements in other sections or on the drawings will be avoided. Cross-referencing of requirements will be done only when necessary to avoid misunderstanding. If the specification states "as shown" or similar wording, the requirement must be shown on the drawings. If the drawings reference the specifications, the specification must cover the reference. If a specification references another specification, the referenced specification must be included in the project. The designer shall insure that specifications and drawings are properly used; specifications to establish requirements such as quality and workmanship, and drawings to establish requirements such as layouts and dimensions.

3.4 FINAL DESIGN.

3.4.1 Marked-Up Specifications.

Marked-up specifications for final review will not be accepted. The designer shall submit specifications at the 100% Final Submittal Design review stage in a camera-ready, one-sided (not bound) hardcopy for reproduction in addition to digital copy of the specifications.

3.4.2 Ready to Advertise (RTA).

(a) Following the 100% Final Submittal Design review, the specification with review comments will be returned to the designer. The designer shall incorporate the comments into the specifications and prepare the final, camera-ready, hard copy specification utilizing automated specification techniques (SPECSINTACT). The specifications will not be stapled or have holes punched. They will be in single page copy one side only; two-sided or bound copies will not be acceptable. The final hard copy and a floppy disk version in SGML (SPECSINTACT) format shall be submitted. The cover sheet and notes to the specification writer (if applicable) shall be deleted.

3.5 INSTRUCTIONS FOR PREPARING RTA AUTOMATED SPECIFICATIONS.

3.5.1 Standard Format.

The designer shall utilize the SPECSINTACT files downloaded from Internet to prepare the final, camera-ready, hard copy specifications. The following must be used.

- (a) Top Margin: 1 inch
- Bottom Margin: 1 inch
- Left-hand Margin: 1 inch
- Right-hand Margin: 1 inch
- (b) Courier 10 pitch (small elite). (Large Oversize fonts will not be accepted.
- (c) Specifications shall be presented in Letter quality.
- (d) Left justification turned on.
- (e) Right justification turned off.
- (f) Widows and orphans protection turned on.
- (g) Page numbering footers set to allow the computer to automatically number the pages consecutively with the section number included when the document is printed. (Example: 03301-1, 03301-2, 03301-3, etc.) The SPECSINTACT program will automatically generate this function.
- (h) Hard returns placed only at the required locations (i.e., at the end of the paragraphs) to allow the text to word-wrap. Hard returns left after each line in tables and forms to prevent word-wrapping and retain the correct text format.

3.5.2 Automated Submittal Register.

The Submittal Register will be produced using the automated generation procedures found in the SPECSINTACT software commands. Exhibit 3-9 provides an example of a Submittal Register generated using the automated procedures.

3.6 AIDS TO ADVERTISING.

3.6.1 General.

In addition to the drawings and specifications, the designer is required to furnish certain "Aids to Advertising". These aids are discussed below and will be furnished as indicated.

3.6.2 Aids Required with the Final Design Submittal.

(a) Resume of Work. The designer shall furnish a "Resume of Work" statement. This will be a brief written description of the work involved and will include a listing of approximate quantities. The project title and location, including the City/Base, State and County will be furnished. The construction cost range will be selected from the ranges listed below and included at the end of the resume.

less than \$25,000
between \$25,000 and \$100,000
between \$100,000 and \$250,000
between \$250,000 and \$500,000
between \$500,000 and \$1,000,000
between \$1,000,000 and \$5,000,000
between \$5,000,000 and \$10,000,000
over \$10,000,000

Exhibit 3-2 is an example of an acceptable "Resume of Work".

(b) Estimate of Construction Time. The designer shall furnish an estimate of the time to construct the project. Consideration will be given to construction contractor procurement of materials and any associated "lead" time, sequence of construction, anticipated climatic conditions to be encountered during construction, etc. Rationale will be included to back up the designer's estimated construction time.

3.6.3 Aids Required with the Ready to Advertise (RTA) Submittal.

All aids required with the RTA submittal must be furnished on floppy disks in SPECSINTACT (SGML) file format.

(a) List of Drawings. An example of a "List of Drawings" is included as Exhibit 3-3. The list of drawings consists of file numbers, the latest date, and the drawing titles. Drawing Titles entered on the List of Drawings must match exactly the titles on the individual drawings.

(b) Bidding Schedule. An example of a typical "Bidding Schedule" is shown in Exhibit 3-4. A "Bidding Schedule containing Options" is shown in Exhibit 3-5. Bid items will be "lump-sum job" items in preference to "unit price" items. The designer is advised that the bidding schedule must be coordinated with the Mobile District Cost Estimating Branch and with EN-DW. Payment paragraphs are no longer required. Bid items identified in the bidding schedule shall be supplemented by the Explanation of Bid Items. Explanation of Bid Items shall be submitted along with the bidding schedule at final and RTA design stages. Examples of "Explanation of Bid Items" are located in Exhibit 3-6 and 3-7.

(c) Table of Contents. The designer shall prepare and submit a "Table of Contents". An example is included as Exhibit 3-8.

(d) List of Government-Furnished Equipment, including description, weight, size, quantities, and approximate value, if applicable.

(e) Information Concerning Salvageable Material, if applicable.

(f) Special Provisions Covering Unusual Situations, i.e., interface problems, outages, security and/or safety requirements, storage area, construction sequences and phasing requirement (if applicable), access to site, early completion dates, etc.

Any questions concerning the above-listed submittals should be directed to EN-DW for resolution.

3.7 AMENDMENTS AND CHANGE ORDERS.

Following the Ready to Advertise submittal by the designer, the project will be advertised for construction. During the advertisement period as discrepancies, oversights, omissions, and other changes surface, the designer will be required to prepare affected drawings and specifications for amendment. Similar changes may also be required to be performed by the designer during construction in the form of Change Orders. Amendments and Change Orders shall be structured in the format specified below.

3.7.1 Specification Revisions.

When specification revisions are necessary, the designer shall mark-up the existing advertised specification in red pencil to reflect the revisions and submit the marked-up pages to EN-DW for final typing and preparation. If an entire new section is to be added to the project, the designer shall prepare the section in final typed format and submit it for issuance with the amendment or change order. A typed listing of all revised specification pages and/or sections will also be submitted.

3.7.2 Specification Revision on PC.

The designer shall not make amended page changes using the word processor. The designer shall submit only marked-up hard copy pages. If entire sections are revised, a word processor may be used and a SPECSINTACT version of this section provided on a floppy disks along with a final typed hard copy version.

E X A M P L E

OUTLINE SPECIFICATIONS
FOR
MOTOR REPAIR SHOP
FY 95, LINE ITEM 289
FORT RUCKER, ALABAMA
SECTION 6

ELECTRICAL

1. The facility will be fed by a 112-1/2 kVA, 3-phase, 12470Y to 208Y/120-volt, pad-mounted transformer. Primary cable (15 kV) will extend underground from an existing pole on X Street to the transformer. The secondary service will extend underground from the transformer to the meter location on the north side of the building.
2. Power and lighting distribution will be from a 208-volt, 3-phase, 4-wire circuit breaker main panelboard located in the Mechanical and Equipment Room.
3. Generally, interior lighting will be of the fluorescent type utilizing 40-watt rapid-start lamps and low-energy ballasts. Exterior lighting on the building and in the parking area will be, respectively, 150-watt and 400-watt luminaries with high-pressure sodium lamps.
4. Special systems or designs to be provided: Low-voltage switching: Class I, Div. 1, Gr. D hazardous classification for the garage area per the NEC.
5. Automatic fire detection system will provide supervised fire alarms of the noncoded type. A public address system will be provided for the working bays and parking areas.

6.	SPEC NUMBER	TITLE
	16370	Electrical Distribution System, Aerial
	16375	Electrical Distribution System, Underground
	16415	Electrical Work, Interior
	16721	Fire Protection and Alarm Systems
	16760	Intercommunications System

Exhibit 3-1
RESUME OF WORK

The site of work is located in Okaloosa County, Florida, at Eglin Air Force Base, and includes the following principal features and approximate quantities:

- (a) Construction of a gymnasium containing approximately 10,000 square feet of floor space, consisting of concrete floor slabs, concrete frame, concrete frame, concrete masonry unit walls, open-web steel joists, steel deck and built-up roofing. Interior work includes plumbing, heating, air conditioning, and electrical work. Gymnasium to be furnished with miscellaneous gymnasium equipment.
- (b) Gas line - 500 feet of 1-1/2 inch pipe.
- (c) Water line - 400 feet of 3-inch pipe; 3-inch gate valve ; connection to existing 10-inch line.
- (d) Sanitary water - 285 feet of 6-inch pipe ; 1 manhole.
- (e) Sprigging - 1.6 acres.
- (f) Landscaping for the gymnasium building.
- (g) Exterior electrical work.
- (h) Clearing and grubbing, including removal of portable wooden bleachers (16' X 74') - 2.9 acres.
- (i) Unclassified excavation - 1,500 cubic yards.
- (j) Unclassified borrow - 500 cubic yards.
- (k) 1-1/2 inch flexible pavement, including tack and prime coats and 7-1/2 inch stablized aggregate base course - 700 square feet.
- (l) 4-inch concrete sidewalk - 500 square yards.
- (m) 6-inch asphalt concrete curb - 50 linear feet.
- (n) Precast concrete bumper curbs - 13 each.
- (o) 4-inch painted stripes - 150 linear feet.
- (p) Storm Drainage System - 6-inch pipe - 72 linear feet
8-inch pipe - 200 linear feet
10-inch pipe - 58 linear feet

The cost of this work is estimated to be between \$1,000,000 and \$5,000,000. Construction duration for this project is estimated to be 360 days.

Exhibit 3-2

FILE NO.	LATEST DATE	TITLE
HOW-102-1	February 1995	Index of Drawings
HOW-102-2	February 1995	Location/Vicinity Map
HOW-102-3	February 1995	Survey
HOW-102-4	February 1995	Site Plan
HOW-102-5	February 1995	Dike Details and Elevations
HOW-102-6	February 1995	Dike Drainage Plan
HOW-102-7	February 1995	Miscellaneous Details
HOW-102-8	February 1995	Miscellaneous Details
HOW-102-9	February 1995	Floor Plan
HOW-102-10	February 1995	Wall Sections
HOW-102-11	February 1995	Water Plan

Exhibit 3-3

BIDDER'S NAME: _____

DACAO1-98-B-0130

BIDDING SCHEDULE

Item No.	Description	Estimated Quantity	Unit	Unit Price	Estimated Amount
1.	Renovate Building 6	1	JOB	XXX	
2.	Site Work	1	JOB	XXX	
3.	Asbestos Abatement	1	JOB	XXX	
				TOTAL	

Exhibit 3-4

NOTES FOR BIDDING SCHEDULE

NOTE NO. 1. To better facilitate the public bid opening process, all modifications to bids are to be submitted on copies of the latest bid schedules as published in the solicitation or the latest amendment thereto. In lieu of indicating additions/deductions to bid items, all bidders should state their revised prices for each item. The company name should be indicated on the face of the bidding schedule to preclude being misplaced.

NOTE NO. 2. Bidders must insert a price on all numbered items of the Bidding Schedule. Failure to do so will disqualify the bid.

NOTE NO. 3. If a modification to a bid is submitted and provides for a lump-sum adjustment to the total estimated cost, the application of the lump-sum adjustment to each unit price and/or lump-sum price, in the bid schedule must be stated or, if it is not stated, the bidder agrees that the lump-sum adjustment shall be applied on a prorated basis to every bid item in the bid schedule.

*

*

BIDDER'S NAME: _____
 BIDDING SCHEDULE

DACA01-98-B-0169

Item No.	Description	Estimated Quantity	Unit	Unit Price	Estimated Amount_
	BASE BID				
1.	Storage Facility	1	JOB	XXX	_____
2.	Site Work.	1	JOB	XXX	_____
3.	Site Work.	1	JOB	XXX	_____
	TOTAL BASE BID				_____
	Bid Option No. 1				
4.	McCoy U.S.A.R. Center Storage Facility	1	JOB	XXX	_____
5.	Site Work.	1	JOB	XXX	_____
	TOTAL BID OPTION No.1				_____
	Bid Option No. 2				
6.	Storage Facility	1	JOB	XXX	_____
7.	Site Work.	1	JOB	XXX	_____
	TOTAL BID OPTION No. 2				_____
	TOTAL BASE BID PLUS BID OPTIONS 1 & 2				_____
<hr/>					
	Exhibit 3-5				

NOTES FOR BIDDING SCHEDULE

NOTE NO. 1. To better facilitate the public bid opening process, all modifications to bids are to be submitted on copies of the latest bid schedules as published in the solicitation or the latest amendment thereto. In lieu of indicating additions/deductions to bid items, all bidders should state their revised prices for each item. The company name should be indicated on the face of the bidding schedule to preclude being misplaced.

NOTE NO. 2. Bidders must insert a price on all numbered items of the Bidding Schedule. Failure to do so will disqualify the bid.

NOTE NO. 3. If a modification to a bid is submitted and provides for a lump-sum adjustment to the total estimated cost, the application of the lump-sum adjustment to each unit price and/or lump-sum price, in the bid schedule must be stated or, if it is not stated, the bidder agrees that the lump-sum adjustment shall be applied on a prorated basis to every bid item in the bid schedule.

NOTE NO. 4. CONDITIONS GOVERNING EVALUATION OF BIDS AND AWARD OF CONTRACTS.

One contract only will be awarded on this Bid Schedule and award will be made to the low bidder on the Base Bid and all Options, in accordance with the paragraph entitled "Evaluation Of Options (JUL 1990)" in the Instructions to Bidders.

The Government may require the delivery of the numbered line items, identified in the schedule as option items, in the quantity and at the price stated in the schedule. The Contracting Officer may exercise the option by written notice to the Contractor within 120 days of Notice to Proceed.

NOTE NO. 5. Items marked with an asterisk (*) are items of "New Minor Construction" each of which is subject to a cost limitation of \$263,024.00.

*

*

EXPLANATION OF BID ITEMS

GENERAL: This section comprises an explanation of the bid items identified in the bid schedule for the "AIRFIELD UPGRADE" and "TAXIWAY RAMP". This section is a general scope of work for the bid items described in the bidding schedule and is not intended to be all encompassing in the descriptions. All work specified herein shall be accomplished in accordance with the procedures prescribed in the technical provisions of the specifications and the plans/details as shown on the contract drawings. The contract drawings delineate the limits of the bid items. The Contractor shall bid each type of work as specified below, under the applicable bid item for "AIRFIELD UPGRADE" or for "TAXIWAY RAMP".

1. Payment under the bid items will constitute full compensation for furnishing all materials, equipment, plant, tools, and all labor costs and other associated incidentals necessary to complete the following work:

- a. clearing and grubbing
- b. compacted fill material
- c. storm drainage system
- d. soil cement
- e. grassing

Payment will be made under the applicable bid item at the contract lump sum price for "AIRFIELD UPGRADE" or for "TAXIWAY RAMP". Measurement for payment will not be made.

EXPLANATION OF BID ITEMS

(OPTIONS)

GENERAL: This section comprises an explanation of the bid items identified in the bid schedule for each area of work. The bid schedule and the repair schedules shown on the contract drawings shall be worked together to identify the various locations of work to which each bid item will apply. The Contractor shall bid the work under the applicable bid item for the specific areas identified in the bid schedule. This section is a general scope of work for the bid items described in the bidding schedule and is not intended to be all encompassing in the descriptions. All work specified herein shall be accomplished in accordance with the repair methods and procedures prescribed in the technical provisions of the specifications and the details as shown on the contract drawings.

1. Bid Item Nos. 1, 7, 13, 20, & 34 - "SPALL REPAIR (PARTIAL DEPTH)":
(REPAIR DETAIL TYPE I)

Payment under these bid items will constitute full compensation for the material and labor costs associated with the following work:

- a. saw cut, removal, and disposal of existing concrete pavement
- b. clean existing surface
- c. coat existing concrete surface with epoxy resin then fill spall area with epoxy concrete
- d. construct new joint and seal

Payment for "Spall Repair (Partial Depth)" will be made at the applicable contract unit price per square foot based on measurements of accepted work. Accepted work will be measured in the field to the nearest inch. Areas for payment will be calculated to the nearest 0.01 square foot.

2. Bid Item Nos. 2, 8, 14, 21, & 35 - "CONCRETE REPAIR (FULL DEPTH)":
(REPAIR DETAILS TYPE II, III, & VIII)

Payment under these bid items will constitute full compensation for the material and labor costs associated with the following work:

- a. saw cut, removal, and disposal of existing concrete pavement
- b. drill and install tie bars and dowels
- c. clean existing surface
- d. coat existing concrete surface with epoxy resin
- e. backfill with new PCC (Portland Cement Concrete)
- f. construct new joint and seal

Payment for "Concrete Repair (Full Depth)" will be made at the applicable contract unit price per square foot based on measurements of accepted work. Accepted work will be measured in the field to the nearest inch. Areas for payment will be calculated to the nearest 0.01 square foot.

Exhibit 3-7

3. Bid Item Nos. 3, 9, 15, 22, & 36 - "CRACK REPAIR & JOINT RESAW":
(REPAIR DETAILS TYPE IV AND VII)

Payment under these bid items will constitute full compensation for the material and labor costs associated with the following work:

- a. routing and sawing the joint and crack
- b. cleaning and preparing the joint and crack for sealing
- c. sealing the crack and joint

Payment for "Crack Repair & Joint Resaw" will be made at the applicable contract unit price per foot based on measurements of accepted work. Accepted work will be measured in the field to the nearest inch. Measurements for payment will be made along the resealed joint and crack.

4. Bid Item Nos. 4, 10, 16, 23, & 37 - "REPLACE SLAB (REINFORCED CONCRETE)":
(REPAIR DETAIL TYPE V)

Payment under these bid items will constitute full compensation for the material and labor costs associated with the following work:

- a. removal and disposal of existing concrete pavement
- b. drill and install dowels
- c. clean existing surface
- d. place reinforcing steel
- e. place new PCC (Portland Cement Concrete)
- f. construct new joints and seal

Payment for "Replace Slab (Reinforced Concrete)" will be made at the applicable contract unit price per each slab replacement of accepted work. Quantity for payment will be for each slab.

5. Bid Item Nos. 24, & 38 - "JOINT SEAL - REMOVE & REPLACEMENT":
(REPAIR DETAIL TYPE VI)

Payment under these bid items will constitute full compensation for the material and labor costs associated with the following work:

- a. remove all existing joint sealant
- b. cleaning and preparing the joint for sealing
- c. sealing the joint

Payment for "Joint Seal - Remove & Replacement" will be made at the applicable contract unit price per foot based on measurements of accepted work. Accepted work will be measured in the field to the nearest inch. Measurements for payment will be made along the resealed joint.

Exhibit 3-7 (Cont.)

6. Bid Item Nos. 5, 11, 17, & 25 - "CRACK REPAIR - (FULL DEPTH)":
(REPAIR DETAIL TYPE IX)

Payment under these bid items will constitute full compensation for the material and labor costs associated with the following work:

- a. saw cut, removal, and disposal of existing concrete pavement
- b. drill and install tie bars and dowels
- c. clean existing surface
- d. place reinforcing steel
- e. coat existing concrete surface with epoxy resin
- f. backfill with new PCC (Portland Cement Concrete)

Payment for "Crack Repair - (Full Depth)" will be made at the applicable contract unit price per square foot based on measurements of accepted work. Accepted work will be measured in the field to the nearest inch. Areas for payment will be calculated to the nearest 0.01 square foot.

7. Bid Item Nos. 27 & 40 - "ASPHALT CONCRETE OVERLAY":

Payment under this bid item will constitute full compensation for furnishing all materials, equipment, plant, tools, and all labor costs and other associated incidentals necessary to complete the following work:

- a. cleaning and surface preparation
- b. placing bituminous tack coat
- c. placing and compacting new asphalt concrete overlay
- d. sampling and testing

Payment for "Asphalt Concrete Overlay" will be made at the applicable contract unit price per 2,000-pound ton based on the bituminous mixture used in the accepted work. Bituminous mixture shall be weighed after mixing on approved truck scales and prior to being placed in the work. A certified scale ticket shall be submitted to the Contracting Officer. Tonnage of the bituminous mixtures shall be corrected to compensate for the difference in tonnage of mixtures used in the project (refer to paragraph Correction Factor for Aggregates Used in specification SECTION 02556: ASPHALTIC BITUMINOUS HEAVY-DUTY PAVEMENT).

8. Bid Item Nos. 30 & 42 - "ASPHALT LEVELING":

Payment under this bid item will constitute full compensation for furnishing all materials, equipment, plant, tools, and all labor costs and other associated incidentals necessary to complete the following work:

- a. cleaning and surface preparation
- b. placing new asphalt leveling course
- c. tack coats
- d. sampling and testing

Payment for "Asphalt Leveling" will be made at the applicable contract unit price per 2,000-pound ton based on the bituminous mixture used in the accepted work. Bituminous mixture shall be weighed after mixing on approved truck scales and prior to being placed in the work. A certified scale ticket shall be submitted to the Contracting Officer. Tonnage of the bituminous mixtures shall be corrected to compensate for the difference in tonnage of mixtures used in the project (refer to paragraph Correction Factor for Aggregates Used in specification SECTION 02556: ASPHALTIC BITUMINOUS HEAVY-DUTY PAVEMENT).

Exhibit 3-7 (Cont.)

9. Bid Item Nos. 26 & 39 - "COLD MILLING":

Payment under this bid item will constitute full compensation for furnishing all materials, equipment, plant, tools, and all labor costs and other associated incidentals necessary to complete the following work:

- a. cold milling of asphalt concrete areas indicated on the contract drawings
- b. grade and surface-smoothness testing

Payment will be made at the applicable contract lump sum price for "Cold Milling". No payment will be made for milling outside the indicated area of work.

10. Bid Item No. 28 - "ASPHALT SLURRY SEAL":

Payment under this bid item will constitute full compensation for furnishing all materials, equipment, plant, tools, and all labor costs and other associated incidentals necessary to complete the following work:

- a. cleaning and preparation of existing surface
- b. placing and rolling asphalt slurry seal
- c. sampling and testing

Payment for "Asphalt Slurry Seal" will be made at the applicable contract unit price per square yard based on measurements of accepted work.

11. Bid Item Nos. 31, 43, & 46 - " 17" CONCRETE PAVEMENT":

The quantity of concrete to be paid for will be the number of square yards placed in the completed and accepted pavements. Concrete will be measured in place in the completed and accepted pavements in accordance with the dimensions shown in the plan and cross section. No deductions will be made for rounded or beveled edges or the space occupied by pavement reinforcement, dowel bars, tie bars, or electrical conduits, nor for any void, drainage, or other structure extending into or through the pavement slab, measuring 3 cubic feet or less in volume. No other allowance for concrete will be made unless placed in specified locations in accordance with written instructions previously issued by the Contracting Officer. The quantity of dowels and tie bars used in the work will not be measured for payment but will be considered as a subsidiary obligation of the Contractor, covered under the unit price per square yard for concrete. The unit price for concrete shall include the cost of all labor and materials and the use of all equipment and tools required to complete the concrete work. The unit price shall also include as subsidiary obligations; the removal of 10-12 inches of existing concrete pavement, portion of the existing subgrade material, placement of the new base course, and placement of the new drainage layer.

Payment will be made at the applicable contract unit price per square yard for " 17" Concrete Pavement" based on measurements of accepted work.

12. Bid Item No. 44 - " 12" CONCRETE PAVEMENT":

The quantity of concrete to be paid for will be the number of square yards placed in the completed and accepted pavements. Concrete will be measured in place in the completed and accepted pavements in accordance with the dimensions shown in the plan and cross section. No deductions will be made for rounded or beveled edges or the space occupied by pavement reinforcement, dowel bars, tie bars, or electrical conduits, nor for any void, drainage, or

Exhibit 3-7 (Cont.)

other structure extending into or through the pavement slab, measuring 3 cubic feet or less in volume. No other allowance for concrete will be made unless placed in specified locations in accordance with written instructions previously issued by the Contracting Officer. The quantity of dowels and tie bars used in the work will not be measured for payment but will be considered as a subsidiary obligation of the Contractor, covered under the unit price per square yard for concrete. Payment shall be made at the contract price per square yard for " 12" Concrete Pavement". The unit price for concrete shall include the cost of all labor and materials and the use of all equipment and tools required to complete the concrete work. The unit price shall also include as a subsidiary obligation the removal of 10-12 inches of existing concrete pavement and a portion of the existing subgrade material, and the placement of the new base course.

13. Bid Item Nos. 6, 12, 18, 29, 32, 41 & 45 - "SITE WORK":
Include for payment under these bid items all material and labor costs associated with the following work. Payment under the bid items entitled "Site Work", will also constitute full compensation for all other work not otherwise covered under any other bid item.

- a. pavement removals
- b. removal and disposal of existing storm drain pipes where indicated on the drawings
- c. painting taxiway centerline striping, runway markings, edge striping, holding lines, and helipad marking details
- d. installation of new storm drain pipes and structures including inlet grate replacements
- e. trenching, cutting & patching existing pavements & sidewalks for installation of underground utilities
- f. placement of topsoil, seeding, mulching, sodding and reestablishment of turf where indicated on the drawings
- g. double bituminous surface treatment.
- h. asphalt concrete pavement.

Payment for "Site Work" will be made at the applicable contract lump-sum price. Measurement for payment will not be made.

14. Bid Item No. 33 - "ELECTRICAL WORK":
Include for payment under this bid item all material and labor costs associated with the following electrical work at the NW/SE and NE/SW aprons, Taxiway/Ramp project:

- a. apron lighting demolition
- b. installation of new apron lighting
- c. lighting poles, pole foundations, and associated pole line hardware

Payment for "Electrical Work" will be made at the applicable contract lump-sum price. Measurement for payment will not be made.

15. Bid Item No. 47 - "ASPHALT CONCRETE PAVEMENT":
Payment under this bid item will constitute full compensation for furnishing all materials, equipment, plant, tools, and all labor costs and other associated incidentals necessary to complete the asphalt concrete pavement work associated with the Runway Extension, Extend Runway project:

Exhibit 3-7 (Cont.)

Payment will be made at the applicable contract lump sum price for "Asphalt Concrete Pavement". Measurement for payment will not be made. The bid price shall also include as a subsidiary obligation the placement of new base course.

16. Bid Item No. 48 - "ELECTRICAL WORK":

Include for payment under this bid item all material and labor costs associated with the electrical work for the runway and airfield lighting, Extend Runway project.

Payment for "Electrical Work" will be made at the applicable contract lump-sum price. Measurement for payment will not be made.

17. Bid Item No. 49 - (OPTION NO. 1) "APPROACH LIGHTING":

Include for payment under this bid item all material and labor costs associated with the electrical work for the aircraft approach lighting as indicated on the contract drawings from station 121+00 to station 130+00. Payment under this bid item will also include construction of the earth embankment and all associated sitework to complete the work beyond station 121+00. In the event that Option No. 1 is not awarded, the Contractor shall terminate the work at station 121+00 in such a manner so as to provide a completed and finished project.

Payment will be made at the applicable contract lump-sum price for "Approach Lighting". Measurement for payment will not be made.

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